

The Angiosperm Flora of Singapore Part 7 LIMNOCHARITACEAE

J. P. S. CHOO¹ AND H.T.W. TAN²

¹Block 108, Lorong 1 Toa Payoh, #05-298,
Singapore 310108, Republic of Singapore

²School of Biological Sciences, The National University of Singapore
Singapore 119260, Republic of Singapore

Limnocharis Humb. and Bonpl.

Pl. aequinoct. 1 (1808) 116; M.R. Hend., Malayan Wild Flowers, Monocotyledons (1954) 202-203; Steenis, Fl. Males. 1:5 (1954) 118-120; Backer & Bakh.f., Fl. Java 3 (1968) 1-2; H. Keng, Orders and Families of Malayan Seed Plants (1969) 287; R.R. Haynes & Holm-Niels., Fl. Neotropica 56 (1992) 8-12.

Emergent, substrate-rooted, fleshy, aerenchyma-rich, laticiferous, aquatic herbs; stem very short. *Leaves* simple, basal, glabrous, long-petiolate, exstipulate. *Inflorescence* an umbel-like cincinnus, bracteate. *Flowers* bisexual, actinomorphic, pedicellate, bracteate; sepals 3, persistent; petals 3; staminodes numerous, tricyclic; stamens numerous, dicyclic; carpels up to 20, fused marginally and basally to form a verticil, placentation laminar; stigma sessile. *Follicetum* enclosed by the persistent sepals; follicles up to 20. *Seeds* many per follicle.

Distribution, Ecology and Uses — See under species.

Notes — *Limnocharis* is often regarded as monotypic, although Duchassaing in Grisebach (Bonplandia 6 (1858) 11) recognised *L. laforestii* as a second species (Haynes and Holm-Nielsen, 1992).

Limnocharis has traditionally been placed in the Butomaceae but more recent treatments follow Cronquist (1981) and his narrow concept of the family. The Limnocharitaceae differ from the Butomaceae s.s. by the presence of laticifers, “petiolated leaves that have a terminal pore, a non-petaloid calyx, thin and evanescent petals, and curved seeds and embryos” (Haynes and Holm-Nielsen, 1992).

1. *Limnocharis flava* (L.) Buchenau

Abh. naturwiss. Ver. Bremen 2 (1869) 2; Steenis, Fl. Males. 1:5 (1954) 120;

Backer & Bakh.f., Fl. Java 3 (1968) 1-2; H. Keng, Gdns' Bull., Singapore 40 (1987) 113; I.M. Turner, K.S. Chua & H.T.W. Tan, J. Singapore Nat. Acad. Sci. 18 & 19 (1990) 63; R.R. Haynes & Holm-Niels., Flora Neotropica 56 (1992) 8-10; I.M. Turner, Gdns' Bull., Singapore 45 (1993) 48.

Alisma flava L.

Herb to 1 m tall. *Leaves*: lamina ovate to suborbicular, to 30 by 23 cm, with 1 midrib and 7-17 secondary veins, apex round or apiculate, with a purple-margined hydathode at the abaxial tip; petiole trigonous, to 85 cm long and c. 8 mm in diam.; sheath to 27 cm long. *Inflorescence* 3-9-flowered, after fruiting becoming stolon-like and forming vegetative shoots; peduncle to 71 cm long and c. 1.5 cm in diam., apically trigonous, basally flattened, sheathless; bracts ovate, fugacious, outermost bracts 2, to c. 3.0 by 2.5 cm, subpedicellate supernumerary buds occasionally develop in their axils in mature inflorescences. *Flowers* cockroach-scented; sepals to 22 by 17 mm; petals with a cream margin and yellow base, suborbicular, to 23 by 25 mm, membranous, fugacious; staminodes yellow, stamens with cream anthers and yellow filaments; carpels cream, laterally compressed; pedicels to c. 5.5 by 1 cm. *Follicetum* subglobose, to 15 mm diam.; follicles yellowish when ripe, semi-circular, laterally compressed with thickened peripheral wall, dehiscent. *Seeds* brown, U-shaped, with thin transverse ridges and broad transverse spines, to c. 1 mm long. (**Figure 1.**)

Distribution — This species from tropical South America, is locally naturalized and was first recorded in Singapore in 1930 (Corlett, 1988). It was recently collected in Choa Chu Kang Muslim Cemetry, Jalan Ulu Seletar, Mandai Road, Marina East and Neo Tiew Road.

Ecology — Aquatic or marsh plants usually found growing in or along water margins, e.g., drains, ditches, freshwater pools or ponds in farm- or wasteland and along roadsides. Usually a perennial, it can be annual through drying of its habitat (Backer & Bakhuizen f., 1965). Its presence indicates fertile soils (Ochse, 1931). Flowers open in the morning and fade by afternoon (van Steenis, 1954).

The peduncle of an old inflorescence grows downwards where, on contact with water or mud, it develops leaves and roots so serving as an effective means of vegetative propagation (Backer & Bakhuizen f., 1965).

Uses — In West Java, young leaves and inflorescences are eaten and sold in markets (Burkill, 1935), and are eaten raw or cooked with rice by the Javanese (Tanaka, 1976), and also eaten by the Malays (Burkill,

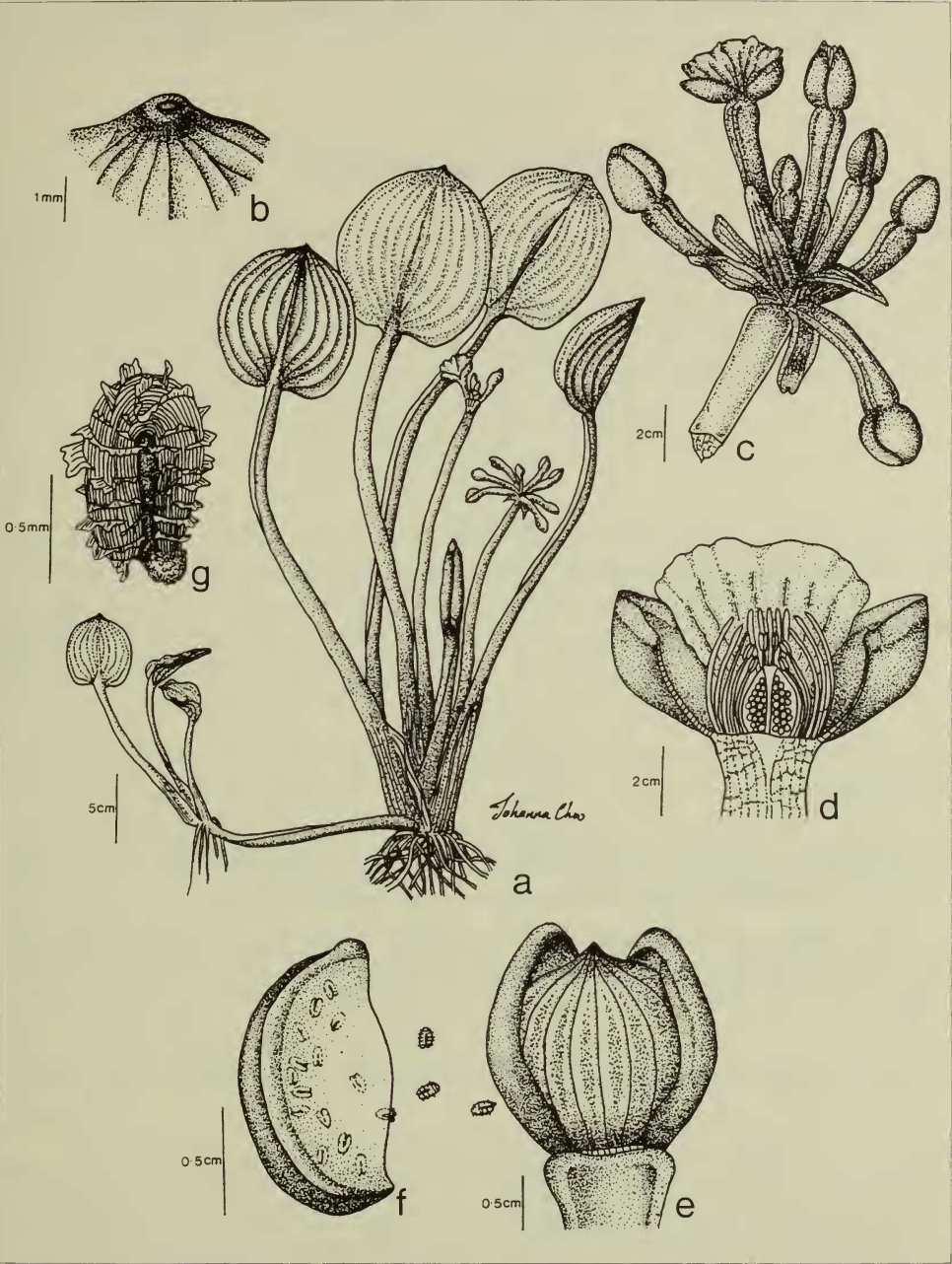


Figure 1. *Limnocharis flava* (L.) Buchenau. a. Habit with two newly developed inflorescences and one old inflorescence which has become stoloniferous with a rooting vegetative shoot at its tip. b. Tip of the lamina showing the hydathode. c. A flower and buds of the inflorescence and the peduncle tip. d. Half-flower. e. Follicetum enclosed by two of the three persistent sepals, with one removed, at the tip of the pedicel. f. One follicle and seeds. g. Seed. Del. J.P.S. Choo. P

1935). The raw lamina has a slightly bitter aftertaste. This plant was also used as cattle fodder and green manure in Peninsular Malaysia (Burkill, 1935).

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